2025 Risk Assessment
Mitigation Phase

APPENDIX 2

RAMP Requirements Roadmap

May 15, 2025

2025 RAMP REQUIREMENTS COMPLIANCE ROADMAP

Unless otherwise indicated, the compliance citation applies to both SoCalGas and SDG&E

The tables that follow provide a general list of the RAMP requirements set forth in relevant Commission decisions that informed the content and presentation of SoCalGas's and SDG&E's 2025 RAMP Reports and/or workpapers and a roadmap to the general areas where those requirements are addressed. This list is not intended to capture every requirement, rather, it is provided as general guidance to help the reader navigate the Reports.

I. 2025 RAMP Report Requirements

D.18-12-014 – Settlement Decision

Topic	Requirement	Compliance
General	1. Identify top risks based on assessments for safety, reliability and financial attributes.	• Vol 1 RAMP-1 • Vol 1 RAMP-2
General	2. Describe the controls or mitigations currently in place to create a baseline for understanding how safety mitigation improves over time.	• Vol 2 All Risk Chapters
General	3. Present a plan for improving the mitigation of each risk.	• Vol 2 All Risk Chapters
General	4. Present two alternative mitigation plans that were considered.	• Vol 2 All Risk Chapters • Workpapers
General	5. Present an early stage "risk mitigated to cost ratio" or related optimization.	• Vol 1 RAMP-3 • Vol 2 All Risk Chapters • Workpapers
General	6. Identify lessons learned in the current round to apply in future rounds.	• Vol 1 RAMP-1 • Vol 1 RAMP-3
General	7. Use required probabilistic analysis and continue to move towards more probabilistic analysis.	• *See* RDF Row 5 • Vol 1 RAMP-3 • Workpapers
General	8. Continue to move towards improved data collection, provide a timeline for improvement.	• *See Data Availability Assessment. Report* filed on 12/6/24.

General	9. Describe Company's safety culture, executive engagement, organization and compensation policies.	• Vol 1 RAMP-4
General	10. Respond to immediate or short-term crises outside of the RAMP and GRC process.	• Vol 1 RAMP-4
D.21-11-009 - S-MAP Phase 1, Tracks 1 & 2		
Topic	**Requirement**	**Compliance**
Controls and Mitigations	OP1b. Each IOU shall evaluate all mitigations for efficacy and efficiency, whether the mitigation is "in process" or newly proposed; and	• Vol 2 Risk Chapters • Workpapers
Controls and Mitigations	OP1c. Each IOU shall calculate ~~RSEs~~ CBRs for all mitigations, including controls that are ongoing.	• Vol 1 RAMP-3 • Vol 2 Risk Chapters • Workpapers
PSPS Events	The IOUs shall treat PSPS events as a risk within the RDF framework, not just as a mitigation, just as they would for any other risk to safety, reliability, and finances. Similar to other risks, the IOUs shall address the likelihood and consequences of PSPS events in the RDF and in future RAMP filings.	• Vol 1 RAMP-1 • Vol 2 SDG&E-Risk-4: Wildfire and PSPS • Workpapers
Baselines	OP1d: Each IOU shall establish baselines for mitigation measures as follows: • The baseline is a reference point in time at the start of the new General Rate Case (GRC) cycle. • The baseline risk as applied to RAMP and GRC proceedings refers to the amount of residual risk evaluated at the baseline (i.e. at the start of the new GRC cycle) after taking into account all risk reduction benefits from all risk mitigation activities projected to have been performed by the start of the new GRC cycle. • The projected risk mitigation activities include those that are classified by the IOUs as controls, as well as all mitigation	• Vol 1 RAMP-3 • Vol 2 All Risk Chapters • Workpapers

	activities for which the IOUs are seeking approval and/or funding in the current or upcoming RAMP and GRC applications.	
Foundational Programs	OP1e: Each IOU shall include the cost of foundational programs in their mitigation ~~RSE~~ CBR calculations if the aggregate cost over the upcoming GRC funding period of the foundational programs supporting a portfolio of risk mitigations exceeds the following: For SDG&E, for its electric and other operations, the lesser of $5 million, or 20 percent of the cost of the portfolio of enabled mitigations, subject to a minimum of $2.5 million for the percentage test; For SDG&E, for its gas operations, the lesser of $2.5 million, or 20 percent of the cost of the portfolio of enabled mitigations, subject to a minimum of $0.5 million for the percentage test; and, For SoCalGas, the lesser of $5 million, or 20 percent of the cost of the portfolio of enabled mitigations, subject to a minimum of $1 million for the percentage test.	• Vol 2 All Risk Chapters • Workpapers
Costs of Foundational Elements	OP1g: Each IOU shall incorporate the costs of foundational elements into the ~~RSEs~~ CBRs they present in their next RAMP filing, shall clearly and transparently explain and justify their chosen distribution of foundational costs to mitigations, and shall comply with applicable requirements of Decision (D.) 18-12-014 to explain their rationale and assumptions in categorizing foundational costs.	• Vol 2 All Risk Chapters • Workpapers

D.22-10-002 – S-MAP Phase 1 Track 3 & 4, Attachment A		
Topic	**Requirement**	**Compliance**
Updating Cost and Other Information	19. The IOU's RAMP cost estimates shall include funding levels, unit costs, the scope of mitigation programs, and the source of estimates. • Where standard work units and unit costs are not available, the utilities will include an explanation as to why they are not available."	• Vol 2 All Risk Chapters • Workpapers
Historical Graphics	20. The IOUs shall provide graphics of historical progress in their RAMP reports that clearly illustrate what safety work has been accomplished and what work remains to be done. The graphics should be consistent with the IOU's safety goals and should provide information on risk mitigations and progress over at least the two immediately preceding RAMP cycles.	• Vol 2 All Risk Chapters
D.22-12-027 – S-MAP Phase 2 Decision		
Topic	**Requirement**	**Compliance**
Value of Statistical Life (VSL) Calculation	Each IOU shall apply the most current published United States Department of Transportation (DOT) value of a statistical life (VSL), adjusted for the base year of their respective RAMP filing, as the standard value in expressing the Safety Attribute described in Appendix A in dollars. OP2: a.1) If applicable, each IOU shall justify its choice of an alternative VSL within the high and low ranges provided by the United States Department of Health and Human Services and provide a sensitivity analysis for the Cost-Benefit Ratio impact of its choice compared to the standard DOT VSL	• Vol 1 RAMP-1 • Vol 1 RAMP-3 • Vol 2 All Risk Chapters • Workpapers

Value of Injury Prevention	OP2: a.ii) Each IOU shall apply one of two following methods for the dollar valuation of injury prevention, as defined in Appendix A, depending on the availability of data: (1) a serious injury as 0.25 of a fatality, or (2) the injury severity level using DOT estimates for the value of injury prevention as indicated here…….	• Vol 1 RAMP-1 • Vol 1 RAMP-3 • Vol 2 All Risk Chapters • Workpapers
Electric Reliability Attribute	OP2: Each IOU shall use the most current version of the Lawrence Berkeley National Laboratory (LBNL) Interruption Cost Estimate (ICE) Calculator to determine a standard dollar valuation of electric reliability risk for the Reliability Attribute included in Appendix A. OP2 b.i) If applicable, each IOU shall justify its choice of an alternative model by providing an analysis comparing the results of its preferred alternative model to the results using the ICE Calculator.	• Vol 1 RAMP-1 • Vol 1 RAMP-3 • Vol 2: SDG&E-Risk-4, Risk-5 and SCG/SDG&E Risk-8 • Workpapers
Gas Reliability Attribute	OP2: c) Each IOU shall apply a dollar value for gas reliability based on the implied value from their most recent Multi-Attribute Value Function Risk Score calculation presented in their most recent RAMP or shall justify its choice of an alternative model by providing an analysis comparing the results of its preferred alternative model to the results using the implied values. If using the implied value from its most recent RAMP … for SDG&E and SoCalGas, use the 2021 RAMP filings,…	• Vol 1 RAMP-3 • Vol 1 RAMP-3 • Vol 2 SCG-Risk-1, 2, 3, and 4 • Vol 2 SDG&E-Risk-1, 2, and 3 • Workpapers
Environmental and Social Justice Pilot Study	OP 5 …Southern California Gas Company (SoCalGas), and San Diego Gas & Electric Company (SDG&E) (collectively investor-owned utilities or IOUs) shall each conduct an Environmental and Social Justice (ESJ) Pilot Study that includes consideration of Disadvantaged and Vulnerable Communities (DVCs)as defined in this decision and shall file the results of their Pilot studies as described in this decision with their next Risk Assessment Mitigation Phase (RAMP) filing.	• Vol 1 RAMP-1 • Appendix 4

Environmental and Social Justice Pilot Study CBO Feedback	OP 5 The IOUs shall provide timely information to Commission Energy Division Staff, who will consult with the Disadvantaged Communities Advisory Group (DACAG) and the Community-Based Organization Working Group (CBOWG) or their designees, prior to finalizing their ESJ Pilot Study plans. The IOUs shall work with Commission Energy Division Staff to make sure each utility's ESJ Pilot Study plan is on an appropriate DACAG and CBOWG meeting agenda in time for these groups to provide meaningful feedback on the plans. The IOUs shall each hold a public webinar on their ESJ Pilot Study during the planning phase of the pilot as described in this decision.	• Vol 1 RAMP-1 • Appendix 4
ESJ Pilot Study Wildfire Smoke	OP 7 …San Diego Gas & Electric Company, and Southern California Gas Company shall use public studies of the health impacts of wildfire smoke available in 2023 and thereafter to structure their risk methodology related to evaluating the estimated impacts from wildfire smoke in their Environmental and Social Justice Pilot Studies.	• Appendix 4
D.24-05-064 S-MAP Phase 3 Decision		
Topic	**Requirement**	**Compliance**
Post Test Year Forecasting Requirement	All Controls and Mitigation programs must include CBRs in each of the GRC post-test years as well as an aggregate CBR for the entire post-test year period and the entire GRC period, by Tranche.	• Vol 1 RAMP-1 • Vol 2 RAMP-3 • Vol 2 All Risk Chapters • Workpapers
Climate Change Approaches	OP 3: Climate Adaptation and Vulnerability Assessment report, as required in D.20-08- 046, should be identified in the IOU's RAMP filings; d) should seek to avoid, if possible, any long-term asset investment strategy that would be at risk in the future because of climate change impacts.	• Vol 1 RAMP-5 • Vol 2 Risk Chapters, as applicable

Climate Change Approach - Data Analysis and Workpapers	May quantitatively consider climate change impacts in their Risk Assessment and Mitigation Phase (RAMP) filings, including through use of forecasts and Subject Matter Expert input. a) Data and analysis used for this purpose shall meet the data standards indicated in Decision 19-10-054 and more generally as adopted in Rulemaking 18-04-019 or a successor proceeding, as discussed in this decision, and must be provided in full in work papers submitted at the time of the RAMP filing	• NA
Climate Change Approach	b) When quantitatively considering climate change impacts in the RAMP filing, the IOUs should clearly identify the known climate hazards considered	• NA
Climate Change comportment with CAVA	c) Any assets identified by an IOU as at risk or vulnerable to climate change in its most recent Climate Adaptation and Vulnerability Assessment report, as required in D.20-08- 046, should be identified in the IOU's RAMP filings;	• Vol 1 SCG RAMP-5 • Vol 1 SDG&E RAMP-5 • Vol 2 SCG-Risk-2, 3, 4, 5, and 6 Vol 2 SDG&E Risk- 2, 3, 4, 5, and 7
D.24-05-064 – Phase 3 Attachment A		
Topic	**Requirement**	**Compliance**
Building a Cost Benefit Approach – Step 1A, Row 2	Principle 1. Attribute Hierarchy: Attributes are combined in a hierarchy, such that the primary Attributes are typically labels or categories and the sub-Attributes are observable and measurable.	• Vol 1 RAMP-3 • Vol 2 All Risk Chapters • Workpapers
Building a Cost Benefit Approach – Step 1A, Row 3	Principle 2. Measured Observations: Each sub-Attribute has Levels expressed in Natural Units that are observable during ordinary operations and as a Consequence of the occurrence of a Risk Event.	• Vol 1 RAMP-3 • Vol 2 All Risk Chapters
Building a Cost Benefit Approach – Step 1A, Row 4	Principle 3. Comparison: Use a measurable proxy for an Attribute that is logically necessary but not directly measurable. This principle only applies when a necessary Attribute is not directly measurable. For example, a measure of the number of complaints about	• Vol 1 RAMP-3 • Vol 2 All Risk Chapters/ Attachment B where applicable • Workpapers

	service received can be used as a proxy for customer satisfaction."	
Building a Cost Benefit Approach – Step 1A, Row 5	Principle 4. Risk Assessment: When Attribute Levels that result from the occurrence of a Risk Event are uncertain, assess the uncertainty in the Attribute Levels by using expected value or percentiles, or by specifying well-defined probability distributions, from which expected values and tail values can be determined. Monte Carlo simulations or other similar simulations (including calibrated subject expertise modeling), among other tools, may be used to satisfy this principle.	• Vol 1 RAMP-3 • Vol 2 All Risk Chapters/Attachment B • Workpapers
Building a Cost Benefit Approach – Step 1A, Row 6	Principle 5. Monetized Levels of Attributes: Apply a monetized value to the Levels of each of the Attributes using a standard set of parameters or formulas, from other government agencies or industry sources, as determined by the Phase II Decision Adopting Modifications to the Risk-Based Decision-Making Framework Adopted in D.18-12-014 and Directing Environmental and Social Justice Pilots in Rulemaking (R.) 20-07-013. A utility may deviate from the agreed upon standard set of parameters or formulas by submitting a detailed explanation as to why the use of a different value would be more appropriate. The use of a different set of parameters or formulas to determine the Monetized Levels of Attributes requires an analysis comparing the results of its "equivalent or better" set of parameters or formulas against the results of the agreed upon standard set of parameters or formulas"	• Vol 1 RAMP-3 • Vol 2 All Risk Chapters • Workpapers
Building a Cost Benefit Approach – Step 1A, Row 7	Principle 6. Risk Adjusted Attribute Levels: Apply a Risk Scaling Function to the Monetized Levels of an Attribute or Attributes (from Row 6) to obtain Risk-Adjusted Attribute Levels. The Risk Scaling Function is an adjustment made in the risk model due to different magnitudes of Outcomes, which can capture aversion or indifference	• Vol 1 RAMP-3 • Vol 2 SDGE-Risk-4 • Workpapers

	towards those Outcomes. The Risk Scaling Function can be Linear or convexly non-Linear. For example, the Risk Scaling Function is Linear to express indifference if avoiding a given change in the Monetized Attribute Level does not depend on the Attribute Level. Alternatively, the Risk Scaling Function is convexly non-Linear to express aversion if a change in the Attribute level results in an increasing rate of change in the Risk-Adjusted Monetized Attribute Level as the Level of the Attribute increases.	
Benefit Approach – Step 1A, Row 7	When completing Rows 5 and 24 in the RDF, if a utility chooses to address tail risk using the power law or other statistical approach and chooses to present Risk-Adjusted Attribute Levels by relying on a convex scaling function, then it must supplement its analysis by also presenting Risk-Adjusted Attribute Levels by relying on a Linear scaling function.	• Vol 1 RAMP-3 • Vol 2 SDG&E-Risk-4 • Workpapers
Identify Risks for the Enterprise Risk Register Step 1B, Row 8	Risk Identification and Definition: Utilities' risks are defined in their respective Enterprise Risk Registers. The Enterprise Risk Register is the starting point for identifying the risks that will be included in the RAMP. The process for determining these risks will be described in the RAMP. The RAMP will consider risks using the same risk definitions as in the ERR.	• Vol 1 RAMP-2 • Vol 1 RAMP-3 • Vol 2 – All Risk Chapters
	Each RAMP filing will highlight any changes to the ERR from the previous RAMP or GRC filings	• Vol 1 RAMP-2 • Vol 2 All Risk Chapters
Risk Assessment and Risk Ranking in Preparation for RAMP Step 2A, Row 9	Risk Assessment: Using the Cost-Benefit Approach developed in accordance with Step 1A, for each Risk included in the Enterprise Risk Register, the utility will compute a monetized Safety Risk Value using only the Safety Attribute. The utility will sort its ERR Risks in descending order by the monetized Safety Risk Value. For the top 40% of ERR risks with a Safety Risk Value greater than zero dollars, the utility will compute a monetized Risk Value using at least the	• Vol 1 RAMP-1 • Vol 1 RAMP-2 • Vol 1 RAMP-3

	Safety, Reliability and Financial Attributes to determine the output for Step 2A. The output of step 2A, along with input from stakeholders described in Row 12 below, will be used to decide which risks will be addressed in the RAMP.	
Identification of Potential Consequences of Risk Event Step 2A, Row 10	The identified potential Consequences of a Risk Event should reflect the unique characteristics of the utility. For each enterprise risk, the utility will use actual results, available and appropriate data (e.g., Pipeline and Hazardous Materials Safety Administration data), and/or Subject Matter Experts (SMEs) to identify potential Consequences of the Risk Event, consistent with the Cost-Benefit Approach developed in Step 1A. The utility should use utility specific data, if available. If data that is specific to the utility is not available, the utility must supplement its analysis with subject matter expertise. Similarly, if data reflecting past results are used, that data must be supplemented by SME judgment that takes into account the Benefits of any Mitigations that are expected to be implemented prior to the GRC period under review in the RAMP submission.	• Vol 2 All Risk Chapters, Attachment B • Workpapers
Identification of the Frequency of the Risk Event Step 2A, Row 11	The identified Frequency of a Risk Event should reflect the unique characteristics of the utility. For each enterprise risk, the utility will use actual results and/or SME input to determine the annual Frequency of the Risk Event. The utility should use utility specific data, if available. If data that is specific to the utility is not available, the utility must supplement its analysis with subject matter expertise. In addition, if data reflecting past results are used, that data must be supplemented by SME judgment that takes into account the Benefits of any Mitigations that are expected to be implemented prior to the GRC period under review in the RAMP submission.	• Vol 2 All Risk Chapters, Attachment B • Workpapers

	The utility will take into account all known relevant Drivers when specifying the Frequency of a Risk Event. Drivers should reflect current and/or forecasted conditions and may include both external actions as well as characteristics inherent to the asset. For example, where applicable, Drivers may include: the presence of corrosion, vegetation, dig-ins, earthquakes, windstorms or the location of a pipe in an area with a higher likelihood of dig-ins.	
Selecting Enterprise Risks for RAMP Step 2B, Row 12	Risk Selection Process for RAMP: Using the analysis performed in Step 2A, the utility will preliminarily select risks to be included in the RAMP. The utility will host a publicly noticed workshop, to be appropriately communicated to interested parties and at a minimum, should include the CPUC's Safety Policy Division (SPD), to gather input from SPD, other interested CPUC staff, and interested parties to inform the determination of the final list of risks to be included in the RAMP. Based on input received from SPD, other interested CPUC staff, and interested parties, the utility will make its determination of the final list of risks to be addressed in its RAMP. The rationale for taking or disregarding input during the workshop will be addressed in the utility's RAMP.	• Vol 1 RAMP-1 • Vol 1 RAMP-2 • Vol 1 RAMP-3
Calculation of Risk Step 3, Row 13	For purposes of the Step 3 analysis, pre- and post-mitigation risk will be calculated by multiplying the Likelihood of a Risk Event (LoRE) by the Consequences of a Risk Event (CoRE). The CoRE is the sum of each of the Risk-Adjusted Attribute Values using the utility's full Cost-Benefit Approach.	• Vol 2 All Risk Chapters
Definition of Risk Events and Tranches Step 3, Row 14	Detailed pre- and post-mitigation analysis of Mitigations will be performed for each risk selected for inclusion in the RAMP. The utility will endeavor to identify all asset groups or systems subject to the risk and each Risk Event associated with the risk. For example, if	• Vol 1 RAMP 3 • Vol 2 All Risk Chapters, Attachment D • Appendix 3

	Steps 2A and 2B identify wildfires associated with utility facilities as a RAMP Risk Event, the utility will identify all Drivers that could cause a wildfire and each group of assets or systems that could be associated with the wildfire risk, such as overhead wires and transformers.	• Workpapers
	For each Risk Event, the utility will subdivide the group of assets or the system associated with the risk into Tranches. Risk reductions from Mitigations and Cost Benefit Ratios will be determined at the Tranche level, which gives a more granular view of how Mitigations will reduce Risk.	
	The determination of Tranches will generally be based on how the risks, as a product of LoRE and CoRE, and assets are managed by each utility, data availability and model maturity, and strive to achieve as deep a level of granularity as reasonably possible. The rationale for the determination of Tranches, or for a utility's judgment that no Tranches are appropriate for a given Risk Event, will be presented in the utility's RAMP submission.	
	For the purposes of the risk analysis, all of the elements (i.e., assets or system) that are scoped for a given RAMP and GRC Application and contained within the identified Tranche would be considered to have homogeneous risk profiles, meaning they should have the same LoRE and CoRE.	
	The best practice for determining the homogeneity of risk profiles in reporting Tranches is the use of quintiles of LoRE and quintiles of CoRE, resulting in 25 reporting tranches. The utility can and should submit more granular data in workbooks included with RAMP and GRC filings if it is available. If the assets or system associated with a given risk are less than 25 in number, the utility may use an alternative means of determining homogeneity of risk profiles,	

	including quartiles or other smaller divisions of LoRE and CoRE, but this alternative means must be described in detail in the RAMP filing.	
	If a utility desires to use an alternative determination of Tranches not reflecting 25 homogenous risk profiles based on LoRE and CoRE, or they wish to use a percentile ranking approach that would result in more than 25 reporting Tranches, the utility must submit a White Paper describing their preferred method for determining Tranches and relevant workpapers to SPD no later than 45 days before their first pre-RAMP workshop and must serve the White Paper to the service list of R.20-07-013 or a successor proceeding as well as the service list of the utility's most recent RAMP application no later than 45 days before their first pre-RAMP workshop. Staff and parties may provide input on the IOU's White Paper within the 21 days of the submittal. The utility must also include the White Paper in its RAMP filing, clearly indicating any changes to the previously served version. An IOU may submit this White Paper without prejudice to the right of parties to the RAMP or GRC to challenge such alternative determination of tranches.	• Vol 1 RAMP-3 • Appendix 3 • Workpapers
Bow Tie Step 3, Row 15	For each risk included in the RAMP, the utility will include a Bow Tie illustration. For each Mitigation presented in the RAMP, the utility will identify which element(s) of its associated Bow Tie the Mitigation addresses.	• Vol 1 RAMP-2 • Vol 2 All Risk Chapters
Expressing Effects of a Mitigation, Step 3, Row 16	The effects of a Mitigation on a Tranche will be expressed as a change to the Tranche-specific pre-mitigation values for LoRE and/or CoRE. The utility will provide the pre- and post-mitigation values for LoRE and CoRE determined in accordance with this Step 3 for all Mitigations subject to this Step 3 analysis.	• Vol 1 RAMP-3 • Appendix C • Workpapers

Determination of Pre-Mitigation LoRE by Tranche Step 3, Row 17	The pre-mitigation LoRE is the probability that a given Risk Event will occur with respect to a single element of a specified Tranche over a specified period of time (typically a year) in the planning period, before a future Mitigation is in place.	• Instructional, informs workpapers
Determination of Pre-Mitigation CoRE Step 3, Row 18	The pre-mitigation CoRE is the sum of each of the pre-mitigation Risk-Adjusted Attribute Values using the utility's full Cost-Benefit Approach. The CoRE is calculated using the full Cost-Benefit Approach tool constructed consistent with Step 1A above.	• Instructional, informs workpapers
Determination of Post-Mitigation LoRE Step 3, Row 20	The monetized pre-mitigation risk value will be calculated as the product of the pre-mitigation LoRE and the pre-mitigation CoRE for each Tranche subject to the identified Risk Event.	• Instructional, informs workpapers
Determination of Post-Mitigation CoRE Step 3, Row 21	The post-mitigation LoRE calculation will be conducted at the same level of granularity as the pre-mitigation risk analysis within Step 3. The calculated value is the probability of occurrence of a Risk Event after the future Mitigation is in place.	• Instructional, informs workpapers
Measurement of Post-Mitigation Monetized Risk Value Step 3, Row 22	The monetized post-mitigation risk value will be calculated as the product of the post-mitigation LoRE and post-mitigation CoRE for each Tranche subject to the identified Risk Event.	• Instructional, informs workpapers
Measurement of Risk Reduction Provided by Mitigation Step 3, Row 23	The risk reduction provided by a risk mitigation will be measured as the difference between the values of the monetized pre-mitigation risk value and the monetized post-mitigation risk value.	• Instructional, informs workpapers

Use of Expected Value for CoRE; Supplemental Calculations Step 3, Row 24	In the case of wildfire risks, if the utility choose to present an Alternative Analysis regarding tail value, the utility: (a) should use a truncated power law distribution method as a best practice by conducting multiple tests of truncation values to determine goodness of fit to existing data and then include the results in their RAMP application; and, (b) may use an alternative modeling method to the truncated power law, and submit to SPD and serve to the service list of R.20-07-013, or a successor proceeding, and the utility's most recent RAMP application proceeding a White Paper and related workpapers clearly justifying its approach no later than 45 days before its first pre-RAMP workshop. Staff and parties may provide input on the IOU's White Paper within 21 days of the submittal. The utility must also include the White Paper in its RAMP filing, clearly indicating any modifications to the earlier served version.	• Instructional, informs workpapers • Vol 2 SDG&E Risk-4
Cost-Benefit Ratios Calculation Step 3, Row 25	The Cost-Benefit Ratio calculation should be calculated by dividing the dollar value of Mitigation Benefit by the Mitigation cost estimate. • The values in the numerator and denominator should be present values to ensure the use of comparable measurements of Benefits and costs. • The Benefits should reflect the full set of Benefits that are the results of the incurred costs. When calculating CBRs for each mitigation, the IOUs must provide the following three scenarios: a) Societal Discount Rate Scenario b) Weighted-Average Cost of Capital Discount Rate Scenario, and c) Hybrid Discount Rate Scenario For capital programs, the costs in the denominator should include incremental expenses made necessary by the capital investment.	• Vol 1 RAMP-3 • Vol 2 All Risk Chapters • Appendix 5 • Instructional, informs workpapers

Mitigation Strategy Presentation in the RAMP and GRC Step 3, Row 26	The utility's RAMP filing will provide a ranking of all RAMP Mitigations by Cost-Benefit ratios. In the GRC, the utility will provide a ranking of Mitigations by Cost Benefit Ratios, as follows: (1) For Mitigations addressed in the RAMP, the utility will use risk reduction estimates, including any updates, and updated costs to calculate Cost-Benefit Ratios and explain any differences from its RAMP filing; (2) For Mitigations that require Step 3 analysis under and consistent with Row 28, the utility will include the Cost-Benefit Ratios, calculated in accordance with Step 3, in the ranking of Mitigations by Cost-Benefit Ratios. In the RAMP and GRC, the utility will clearly and transparently explain its rationale for selecting Mitigations for each risk and for its selection of its overall portfolio of Mitigations. The utility is not bound to select its Mitigation strategy based solely on the Cost-Benefit Ratios produced by the Cost-Benefit Approach. Mitigation selection can be influenced by other factors including, but not limited to, funding, labor resources, technology, planning and construction lead time, compliance requirements, Risk Tolerance thresholds, operational and execution considerations, and modeling limitations and/or uncertainties affecting the analysis. In the GRC, the utility will explain whether and how any such factors affected the utility's Mitigation selections.	• Vol 1 RAMP-3 • Vol 2 All Risk Chapters • Appendix 5 • Workpapers
Dynamic Analysis Step 3, Row 27	If LoRE or CoRE is expected to change substantially over time due to factors such as asset age, asset condition, and varying effect of Mitigation over time, these changes should be specified and	• Vol 1 RAMP-3 • Workpapers

	incorporated into the calculation of monetized pre- and post-mitigation risk values and Cost-Benefit Ratios. One means of incorporating these changes is by the use of the dynamic analysis demonstrated by the Joint Intervenors in the test drive problems for high pressure gas pipelines for PG&E and SoCalGas/SDG&E in Phase 2 of A.15-05-002 et al	
Transparency in RAMP and GRC – Results can be understood Step 3, Row 29	Inputs and computations for the Steps described in this document should be clearly stated and defined in RAMP and, when applicable, the GRC. The sources of inputs should be clearly specified. When SME judgment is used, the process that the SMEs undertook to provide their judgment should be described. Any questionnaire or document used to solicit SME judgment will be made available to the CPUC and parties upon request. The utility should specify all information and assumptions that are used to determine both monetized pre- and post-mitigation risk values.	• Vol 1 RAMP-3 • Vol 2 All Risk Chapters, Attachment B and Attachment D • Workpapers
Sensitivity Analysis Step 3, Row 30	The utility will identify critical parameters and assumptions made in performing the risk analysis and explain why such parameters are critical. The utility will be prepared to complete a sensitivity analysis of its results when requested. Intervenors may request sensitivity analyses via the discovery process.	• Vol 1 RAMP-3